

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (canceled)

Claim 2 (Currently amended): A method of delivering a therapeutic agent to selected sites within an organism, comprising the steps of:

identifying the selected sites for delivering the therapeutic agent;

selecting a catheter having a tubular section and a solid catheter tip, the tubular section having a proximal end and a distal end, the distal end attached to the solid catheter tip, the tubular section comprising solid sections and microporous membrane sections, each of the microporous membrane sections including, a first end and a second end, the first end and the second end coupled to the solid sections forming a continuous cross section of the tubular section, the tubular section having a substantially uniform diameter;

placing the catheter in the organism so that the microporous membrane sections are placed at the selected sites;

coupling the catheter to a pump for delivering the therapeutic agent to the selected sites; and

actuating the pump to deliver the therapeutic agent to the selected sites through the microporous membrane sections; and

wherein the catheter is configured to allow the therapeutic agent to fill a lumen of the catheter until a predetermined luminal pressure exceeding the external pressure of the selected site is reached, and the microporous membrane sections are configured to deliver the therapeutic agent at the predetermined luminal pressure.

Claim 3 (Previously presented): The method as recited in claim 2, wherein the solid section comprises a radio opaque material.

Claim 4 (Previously presented): The method of claim 2, wherein the pump is an implantable pump.

Claim 5 (Previously presented): The method of claim 2, wherein the pump is an external pump.

Claim 6 (Canceled)

Claim 7 (Currently amended): A method of delivering a therapeutic agent to selected sites within an organism, comprising the steps of:

identifying the selected sites for delivering the therapeutic agent;

selecting at least two catheters, the at least two catheters each comprising a tubular section and a solid catheter tip, the tubular section having a solid section and a microporous membrane section, the microporous membrane section including, a first end and a second end, the first end and the second end coupled to the solid section forming a continuous cross section of the tubular section, the tubular section having a substantially uniform diameter;

placing the catheters in the organism so that the microporous membrane sections are located at the selected sites;

connecting each catheter proximal end to a manifold,

coupling the manifold to a pump for delivering the therapeutic agent to the selected sites; and

actuating the pump to deliver the therapeutic agent to the selected sites; and

wherein the at least two catheters are configured to allow the therapeutic agent to fill a lumen of the at least two catheters until a predetermined luminal pressure exceeding the external pressure of the selected site is reached, and the microporous membrane sections are configured to deliver the therapeutic agent at the predetermined luminal pressure.

Claim 8 (Previously presented): The method as recited in claim 7, wherein the solid section comprises a radio opaque material.

Claim 9 (Previously presented): The method of claim 7, wherein the pump is an implantable pump.

Claim 10 (Previously presented): The method of claim 7, wherein the pump is an external pump.

Claims 11-20 (Canceled)

Claim 21 (Currently amended): A method of delivering a therapeutic agent to selected sites within an organism, comprising the steps of:

identifying the selected sites for delivering the therapeutic agent;

selecting at least two catheters, the at least two catheters comprising a tubular section, the tubular section having a solid section and a diffusion area, and an outer tubular wall and an inner tubular wall, the outer tubular wall having at least one opening through to the inner tubular wall, the inner tubular wall lined with a microporous membrane,

placing each catheter in the organism so that the diffusion area is located at the selected sites;
connecting each catheter proximal end to a manifold,

coupling the manifold to a pump for delivering the therapeutic agent to the selected sites; and
actuating the pump to deliver the therapeutic agent to the selected sites; and

wherein the at least two catheters are configured to allow the therapeutic agent to fill a lumen of the at least two catheters until a predetermined luminal pressure exceeding the external pressure of the selected site is reached, and the diffusion areas configured to deliver the therapeutic agent at the predetermined luminal pressure.

Claim 22 (Original): The method as recited in claim 21, wherein the catheter solid tubular section comprises a radio opaque material.

Claim 23 (Original): The method as recited in claim 21, wherein the catheter microporous membrane is located in the diffusion area.

Claim 24 (Original): The method as recited in claim 21, wherein the catheter microporous membrane further comprises, an outer area and an inner area, the outer area having an interference fit with the inner tubular wall.

Claim 25 (Original): The method as recited in claim 23, wherein the catheter microporous membrane further comprises, an outer area and an inner area, the outer area having an interference fit with the inner tubular wall.

Claim 26 (Original): The method of claim 21, wherein the pump is an implantable pump.

Claim 27 (Original): The method of claim 21, wherein the pump is an external pump.

Claim 28-38 (Canceled)

Claim 39 (Currently amended): A method of delivering a therapeutic agent to selected sites within an organism, comprising the steps of:

identifying the selected sites for delivering the therapeutic agent;

selecting at least two catheters, the at least two catheters each having a proximal end and a distal end, the at least two catheters each having a tubular section, the tubular section including a solid section and at least two diffusion sections, the at least two diffusion sections longitudinally aligned from the distal end corresponding to the selected sites;

placing each catheter in the organism so that the at least two diffusion sections are located at the selected sites;

connecting each catheter proximal end to a manifold,

coupling the manifold to a pump for delivering the therapeutic agent to the selected sites; and

actuating the pump to deliver the therapeutic agent to the selected site; and

wherein the tubular section further comprises, an outer tubular wall and an inner tubular wall, the outer tubular wall having at least one opening within each of the at least two diffusion sections through to the inner tubular wall, the inner tubular wall lined with a microporous membrane; and

wherein the at least two catheters are configured to allow the therapeutic agent to fill a lumen of the at least two catheters until a predetermined luminal pressure exceeding the external pressure of the selected site is reached, and the diffusion sections configured to deliver the therapeutic agent at the predetermined luminal pressure.

Claim 40 (Currently amended): A method of delivering a therapeutic agent to selected sites within an organism, comprising the steps of:

identifying the selected sites for delivering the therapeutic agent;

selecting at least two catheters, the at least two catheters each having a proximal end and a distal end, the at least two catheters each having a tubular section, the tubular section including a solid section and at least two diffusion sections, the at least two diffusion sections longitudinally aligned from the distal end corresponding to the selected sites;

placing each catheter in the organism so that the at least two diffusion sections are located at the selected sites;

connecting each catheter proximal end to a manifold,

coupling the manifold to a pump for delivering the therapeutic agent to the selected sites; and

actuating the pump to deliver the therapeutic agent to the selected site; and

wherein the catheter tubular section further comprises, an outer tubular wall and an inner tubular wall, the outer tubular wall having at least one opening within each of the at least two diffusion sections through to the inner tubular wall, the inner tubular wall lined with a microporous membrane, the microporous membrane located at the at least two diffusion sections; and

wherein the at least two catheters are configured to allow the therapeutic agent to fill a lumen of the at least two catheters until a predetermined luminal pressure exceeding the external pressure of the selected site is reached, and the diffusion sections configured to deliver the therapeutic agent at the predetermined luminal pressure.

Claim 41 (Currently amended): A method of delivering a therapeutic agent to selected sites within an organism, comprising the steps of:

identifying the selected sites for delivering the therapeutic agent;

selecting at least two catheters, the at least two catheters each having a proximal end and a distal end, the at least two catheters each having a tubular section, the tubular section including a solid section and at least two diffusion sections, the at least two diffusion sections longitudinally aligned from the distal end corresponding to the selected sites;

placing each catheter in the organism so that the at least two diffusion sections are located at the selected sites;

connecting each catheter proximal end to a manifold,

coupling the manifold to a pump for delivering the therapeutic agent to the selected sites; and
actuating the pump to deliver the therapeutic agent to the selected site; and

wherein the catheter tubular section further comprises, an outer tubular wall and an inner tubular wall, the outer tubular wall having at least one opening within each of the at least two diffusion sections through to the inner tubular wall, the inner tubular wall lined with a microporous membrane, the microporous membrane further comprising, an outer area and an inner area, the outer area having an interference fit with the inner tubular wall; and

wherein the at least two catheters are configured to allow the therapeutic agent to fill a lumen of the at least two catheters until a predetermined luminal pressure exceeding the external pressure of the selected site is reached, and the diffusion sections configured to deliver the therapeutic agent at the predetermined luminal pressure.

Claim 42 (Currently amended): A method of delivering a therapeutic agent to selected sites within an organism, comprising the steps of:

identifying the selected sites for delivering the therapeutic agent;

selecting at least two catheters, the at least two catheters each having a proximal end and a distal end, the at least two catheters each having a tubular section, the tubular section including a solid section and at least two diffusion sections, the at least two diffusion sections longitudinally aligned from the distal end corresponding to the selected sites;

placing each catheter in the organism so that the at least two diffusion sections are located at the selected sites;

connecting each catheter proximal end to a manifold,

coupling the manifold to a pump for delivering the therapeutic agent to the selected sites; and

actuating the pump to deliver the therapeutic agent to the selected site; and

wherein the catheter tubular section further comprises, an outer tubular wall and an inner tubular wall, the outer tubular wall having at least one opening within each of the at least two diffusion sections through to the inner tubular wall, the inner tubular wall lined with a microporous membrane, the microporous membrane located at the at least two diffusion sections, the microporous membrane further comprising, an outer area and an inner area, the outer area having an interference fit with the inner tubular wall; and

wherein the at least two catheters are configured to allow the therapeutic agent to fill a lumen of the at least two catheters until a predetermined luminal pressure exceeding the external pressure of the selected site is reached, and the diffusion sections configured to deliver the therapeutic agent at the predetermined luminal pressure.

Claim 43 (Previously presented): The method of claim 39, wherein the pump is an implantable pump.

Claim 44 (Previously presented): The method of claim 39, wherein the pump is an external pump

Claim 45 (Previously presented): The method as recited in claim 39, wherein the solid section comprises a radio opaque material.

Claim 46 (Previously presented): The method of claim 40, wherein the pump is an implantable pump.

Claim 47 (Previously presented): The method of claim 40, wherein the pump is an external pump.

Claim 48 (Previously presented): The method as recited in claim 40, wherein the solid section comprises a radio opaque material.

Claim 49 (Previously presented): The method of claim 41, wherein the pump is an implantable pump.

Claim 50 (Previously presented): The method of claim 41, wherein the pump is an external pump.

Claim 51 (Previously presented): The method as recited in claim 41, wherein the solid section comprises a radio opaque material.

Claim 52 (Previously presented): The method of claim 42, wherein the pump is an implantable pump.

Claim 53 (Previously presented): The method of claim 42, wherein the pump is an external pump.

Claim 54 (Previously presented): The method as recited in claim 42, wherein the solid section comprises a radio opaque material.